Internet das Coisas na Web

Reinaldo Ferraz
W3C Brasil


W3C®
Brasil


ceweb.br


cgi.br


nic.br

A Internet das Coisas tem um enorme potencial.

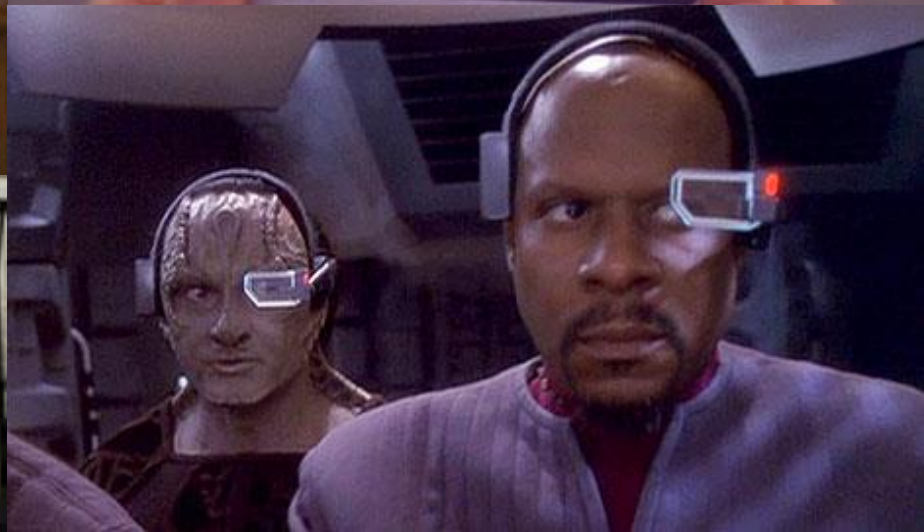
"You won't need to hunt anxiously for your missing shoes in the morning, you'll Google them."

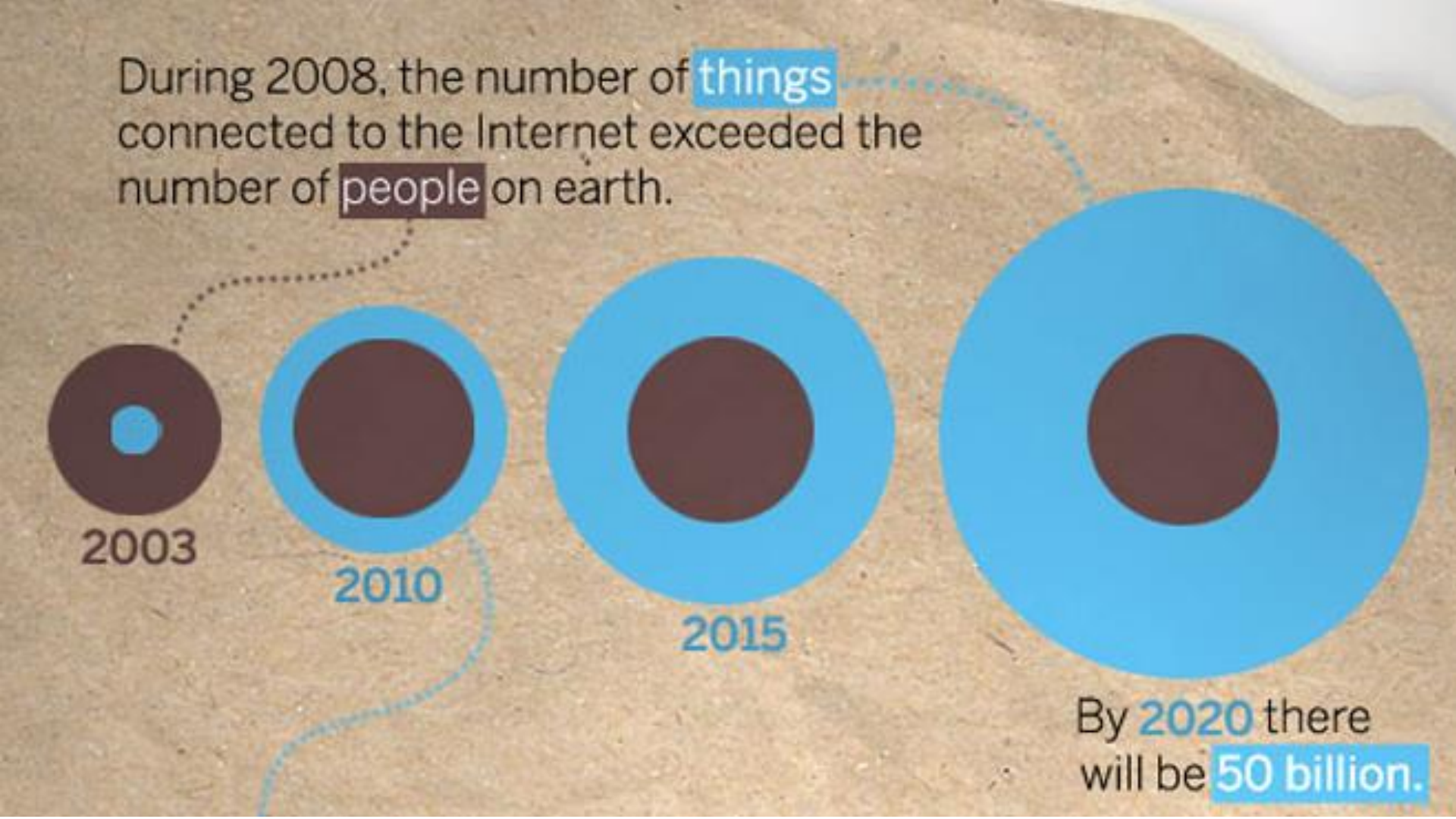
Bruce Sterling, 'Shaping Things'


PHONE


FLAME THE DARK TRUE
SALT WAY LINK
COMPLETE STRIKE
LIMITS VICTORY
FROSTED WAKE
SIMPLE HESITATION


Needles, Douglas J.
Age: 47
Birthday: August





http://share.cisco.com/internet-of-things.html

Podemos conectar tudo a Internet

"Because We Can!"

Sheldon Cooper, Leonard Hofstadter,

Raj Koothrappali and Howard Joel Wolowitz

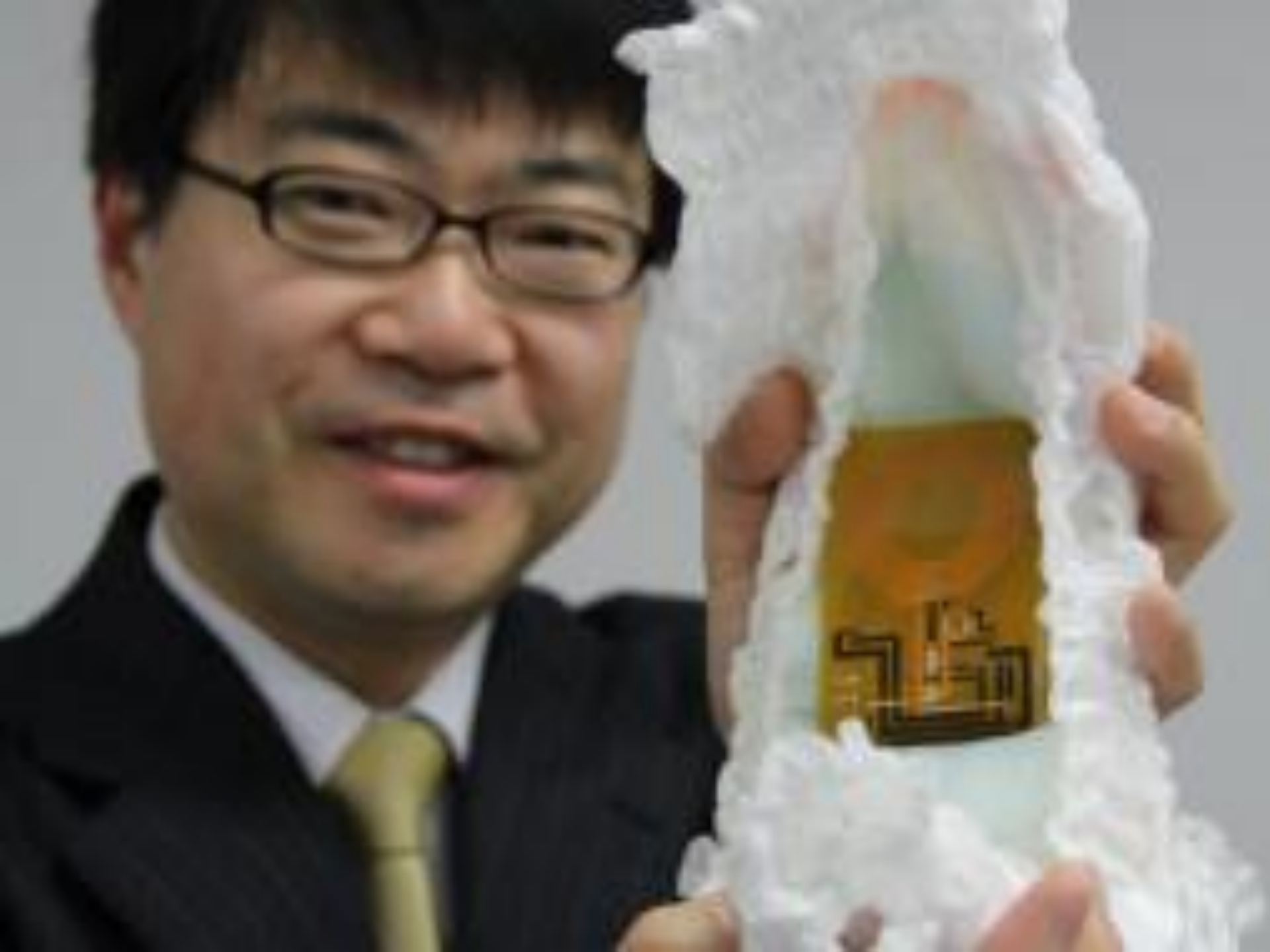
https://www.youtube.com/watch?v=BVd-rYIqSy8


12:45
Mon, 24 Feb


12680
fitbit


iKeg SaaS Engine
Gateway wireless and celluar enabled

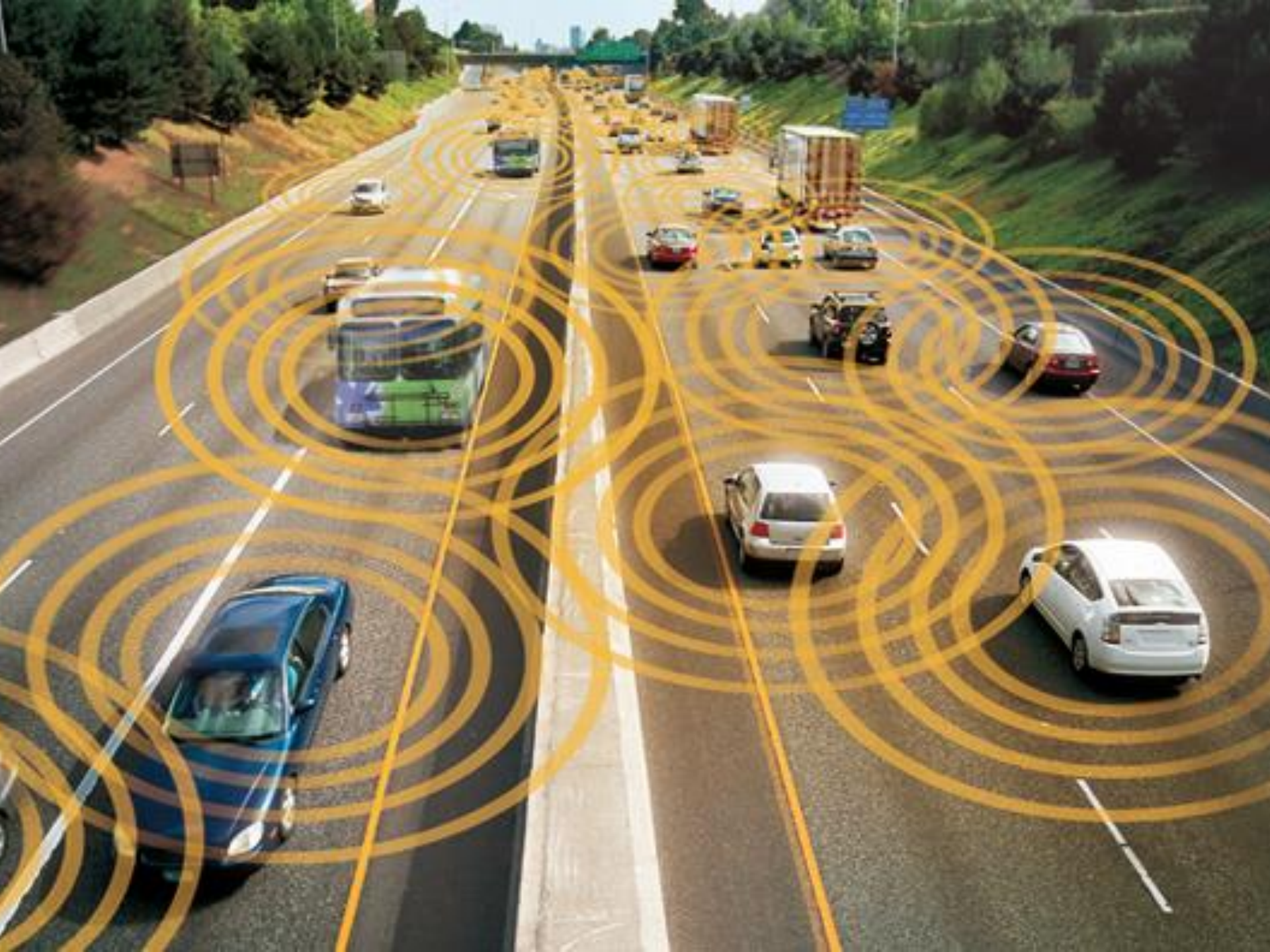
COURTESY: MATT RICHARDSO



Mas isso não é IoT, e sim IoS (Internet of Sensors)

"Leve o casaco porque vai esfriar!"

Sua geladeira.

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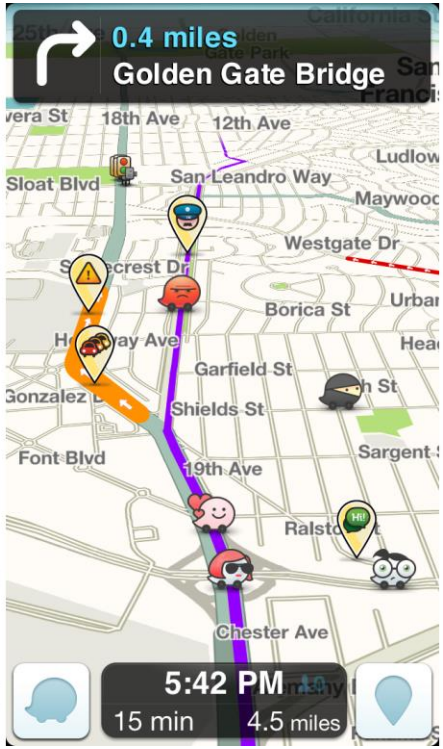
BRIGHT
ON VOL


chrome


tv


Good Morning
Driving to: Work?
Via: US Hwy 101 N
21 min.
1.7 mil
11:25
Routes
Go
23 Friends online
3 Driving there


0.4 miles
Golden Gate Bridge
18th Ave
12th Ave
Sloat Blvd
San Leandro Way
Westgate Dr
Borica St
Garfield St
Shields St
Font Blvd
19th Ave
Chester Ave
5:42 PM
15 min
4.5 miles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Big data vs Small Data

"Forget Big Data –

Small Data Is Driving The Internet Of Things"

Mike Travis, Forbes.


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THE IT-CROWD
LUNGO
FORTE
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TEMP.
BRIGHTNESS


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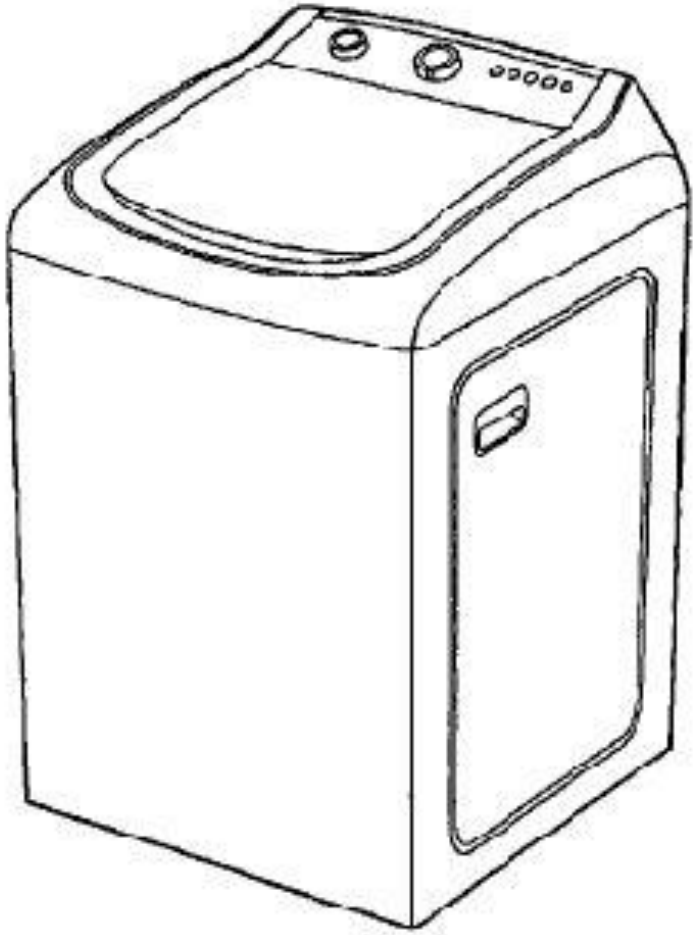
Light Control
Motion Sensor
HVAC Control
Door Control
Environmental Control
Window Control
STB
Remote Control



Google

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Aproximadamente 8.130 resultados (0,26 segundos)

Máquina de Lavar Consul

Anúncio www.consul.com.br/**Máquina**-**Lavar**-Roupa

Economize e reaproveite água com as **Máquinas de Lavar** Roupas da Consul.

Maquina de Lavar Tutorial - LG - YouTube

www.youtube.com/watch?v=m5rq1DryzfM

16 de nov de 2010 - Vídeo enviado por novaemodernablog

Esta tudo bem explicado, mas tendo qualquer duvida é só perguntar. http://www.novaemoderna ...

Lavadora secadora roupa Samsung WD0854W8N1XA ...

www.youtube.com/watch?v=lApAkTx7VEI

6 de abr de 2012 - Vídeo enviado por Marcelo Jucá

Lavadora e secadora de roupas, **máquina de lavar** e secar roupas. ... Assim, encontrei um blog: http://www.niltran.com/resolvendo-**erro**-he2-na ...

Lava e Seca LG 8,5 Kg,manual de instrução www.climafull ...

www.youtube.com/watch?v=RpALfOoZakM

3 de nov de 2013 - Vídeo enviado por Climafull Peças LG

Lava e Seca LG 8,5 Kg,manual de instrução www.climafull.com.br tudo em peças para sua **lavadora** e secadora. ... **Tutorial** Lava e Seca LG 8,5kg 6 motion 01 MIX C SECAGEM - Duration: 16:42. by MisterTuto 14,215 views.

IoT Technologies

Hypertext Transfer Protocol (HTTP) may be used for powered devices with a wired network connection or support for WiFi. HTTP is often used in conjunction with the Representational state transfer (REST) design pattern. HTTP is a client-server protocol, but can be used in a polling mode to handle requests pushed to the device by a server.

Web Sockets is similar to HTTP, but allows for asynchronous message transfer in either direction. Web Sockets is often used with JSON for remote method invocation and event notification.

Constrained Application Protocol (CoAP) is designed as an IP protocol for embedded or constrained devices. It translates easily to HTTP for integration with the Web and RESTful APIs. It also supports notifications pushed from a server to the device. CoAP is often used together with 6LoWPAN for short range wireless connections

6LoWPAN is short forIPv6 over Low power Wireless Personal Area Networks. It is layered on top of the IEEE 802.15.4 standard for the physical layer and media access control for personal area networks, and may be used in conjunction with CoAP.

ZigBee is a low power wireless communications technology optimized for devices requiring a very long battery life. ZigBee is layered on top of the IEEE 802.15.4 standard for the physical layer and media access control for personal area networks.

Near Field Communications (NFC) is a very short range wireless technology and can be used to access sensor readings, and operate door locks, or to open the browser in a smart phone to a URL for a web page relating to the tagged object.

Bluetooth is a short range technology with a suite of profiles for different categories of applications. Bluetooth Low Energy (BLE) offers extended battery life. It can be used for exchange of small amounts of data, either in a broadcast mode or for bidirectional connections. This is expected to be of increasing importance for applications running on smart phones or tablets. The W3C Bluetooth Community Group is drafting an API based upon the GATT profile for BLE, and Google have proposed the use of BLE for broadcasting URLs as part of their vision for the Physical Web.

IoT Technologies

ANT is a proprietary sensor network technology operating in the 2.4 GHz band. It can be used to transfer small amounts of data across networks with hundreds of sensors.

DASH7 is designed for long lived battery operated sensor networks, it works in the 433 MHz unlicensed band. The range is up to 1000m depending on power levels and data rates. Like ZigBee and BLE, DASH7 is aimed at transferring small amounts of data, and unsuitable for audio or video.

KNX for buildings s a standardized (EN 50090, ISO/IEC 14543), OSI-based network communications protocol for intelligent buildings. KNX is the successor to, and convergence of, three previous standards: the European Home Systems Protocol (EHS), BatiBUS, and the European Installation Bus (EIB or Instabus). The KNX standard is administered by the KNX Association. KNX can be realized over a mix of networking technologies, e.g. twisted pair cable, powerline networking, radio (KNX-RF), infrared and conventional ethernet.

EnOcean is a similar protocol to KNX for sensors that are self powered, e.g. harvesting energy when you push a switch that is sufficient for sending 2 or 3 packets. The sensors are quite expensive (e.g. 60 CHF) but available for motion sensors (light and thermal IR), beds, seats, window handles and so forth.

Infrared is widely used for remote control of TVs, air conditioners etc. Infrared was popular for PDAs and laptops in the late 90's and early 2000's, but lost ground to RF technologies such as WiFi and Bluetooth. Infrared is making a comeback for fast transmission of photos from phones to printers etc.

Universal Serial Bus (USB) s an industry standard defining cables, connectors and protocols. It is widely used for connecting devices to computers, e.g. keyboards, mouse pointers, hard drives for storage, game controllers, and also for connecting to printers, scanners, digital cameras, smart phones and tablets. USB is designed to power devices and is commonly used for charging device batteries, replacing the need for a separate cable.

Wireless USB (WUSB) is a standard for connecting devices using a wide band protocol in the 3.1 GHz to 10.6 GHz region. The range is 3 to 10m.

IoT Technologies

IEEE 1394 (Firewire) is a serial connection designed for high speed transfers, and similar in some ways to USB. IEEE 1394 has lost ground to USB as the latter has increased in speed, and due to the need for a separate power connection for Firewire devices.

WiFi ISO 802.11 is a local area network technology for managed or ad hoc networks in 2.4 GHz or 5 GHz bands.

Machine to Machine (M2M) is a generic term for wired or wireless communication technologies between devices. Mobile network operators are promoting cellular M2M, e.g. based upon GSM data modules, for applications such as smart meters.

Low Throughput Network (LTN) is a wide area wireless technology defined by ETSI, and offers long range and minimal battery consumption.

Weightless is a protocol for using white space spectrum for exchanging data between a base station and thousands of client devices. Base stations are directly connected to the Internet. Clients are allocated a schedule of times and frequencies to communicate with their base station. A database is used to avoid interference with local terrestrial TV broadcasts.

MQTT is a lightweight publish-subscribe protocol based upon TCP/IP connections. It is intended for embedded/constrained devices, and needs to be used in conjunction with a message broker.

XMPP is an XML based protocol used for presence, instant messaging, and real-time communication and collaboration.

Efficient XML Interchange (EXI) is a binary format for structured data that is suitable for embedded/constrained devices and offers further compression when used with a specific XML schema. It may be used in conjunction with CoAP.

JavaScript Object Notation (JSON) is a textbased representation for structured data that is increasingly popular with Web developers. JSON-LD is a set of conventions for using JSON for linked data.

industrial internet CONSORTIUM

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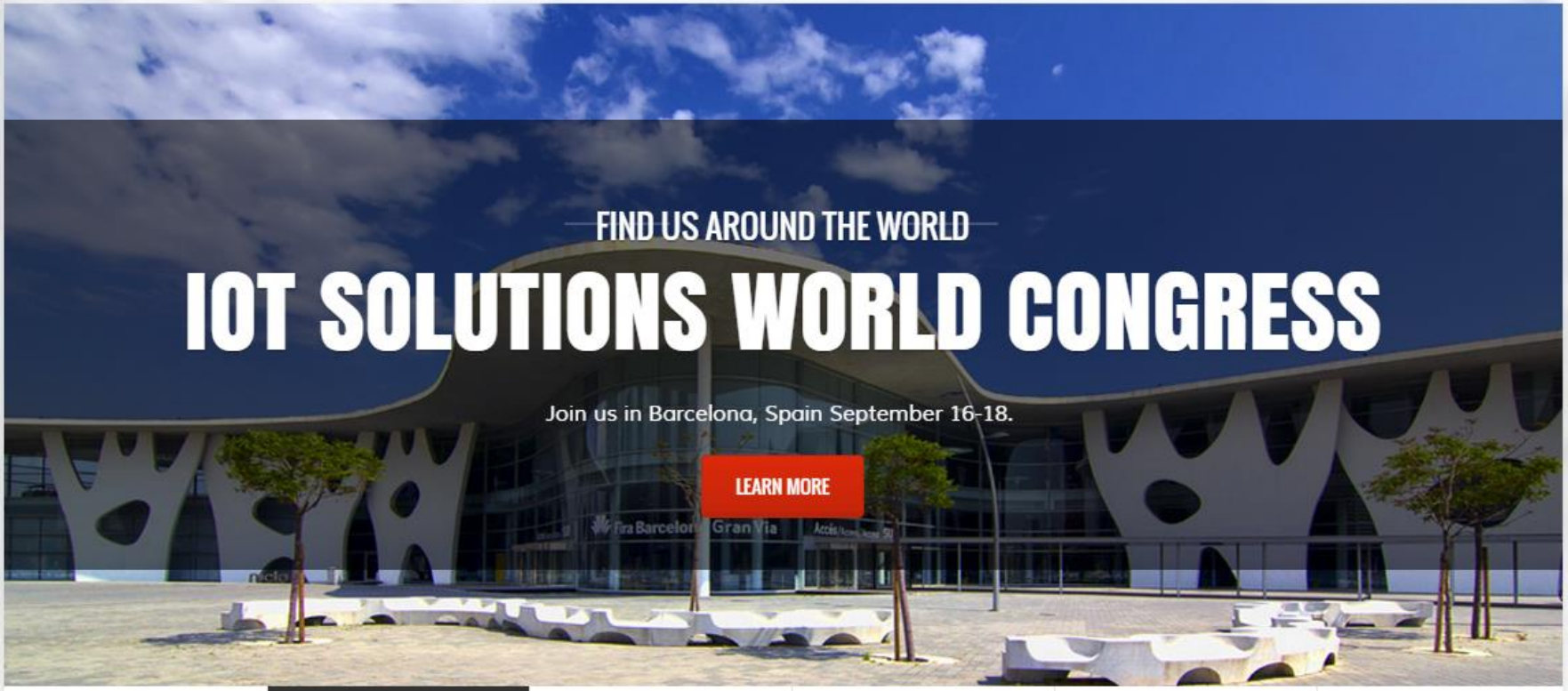

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Web das Coisas

"Interoperability is critical"

Mike Bell, head of wearables at Intel

A Web das Coisas é essencialmente sobre o papel das tecnologias da Web para facilitar o desenvolvimento de aplicações e serviços para as coisas e sua representação virtual

Camada de aplicação e serviços

"Quem quer dinheiro?"

Silvio Santos


Communications
Connected
Managed
Secured
Medical
Smart homes
Industrial
Smart Grid
Building Automation
Vehicles

Padronização é a chave da Internet das Coisas

"The driver goal is with the developers."

Maarten Ectors, Vice President Internet of Things at Canonical Ltd. / Ubuntu

Data Formats

Interface Definitions

Security

Privacy

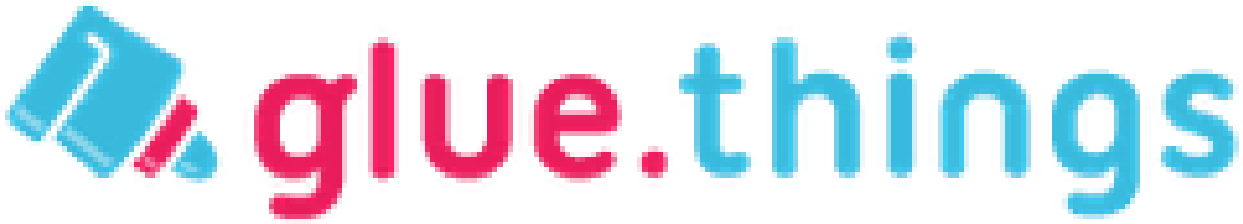
Web Automotiva

Algumas iniciativas

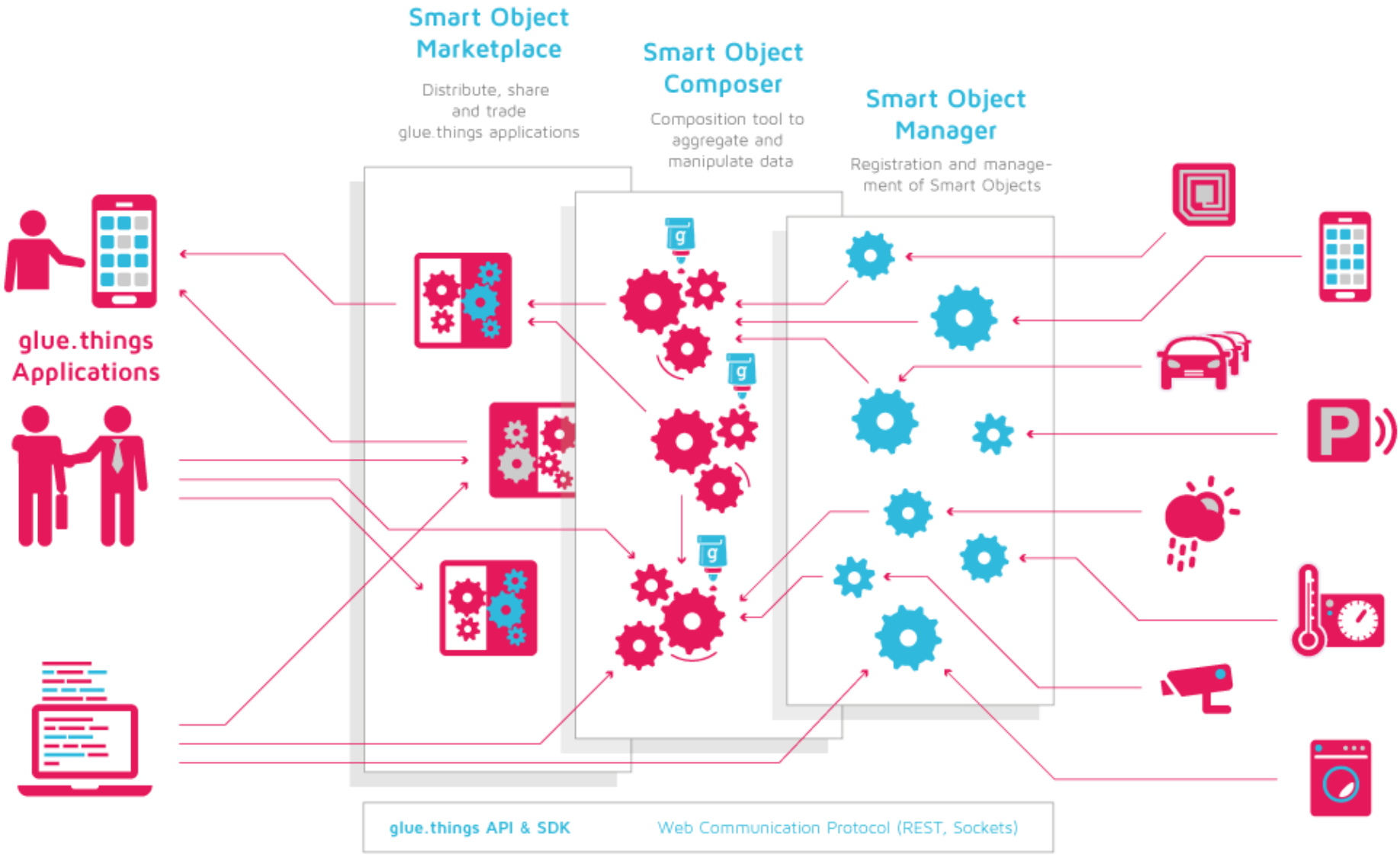
"Do or do not. There is no try"

Yoda

- http://www.compose-project.eu/
- https://www.youtube.com/watch?v=G6R0pCV5MG8
- https://github.com/nopbyte/compose-idm



http://www.gluethings.com/


Smart Object Marketplace
Distribute, share and trade glue.things applications
Smart Object Composer
Composition tool to aggregate and manipulate data
Smart Object Manager
Registration and management of Smart Objects
glue.things Applications
glue.things API & SDK
Web Communication Protocol (REST, Sockets)
glue.things Dashboard
Smart Object Manager
Smart Object Composer
Smart Object Marketplace
Connected Smart Objects
Mobiles, Wearables, TVs, Sensors and Actuators

https://evrythng.com/

http://vimeo.com/51878487

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Produtos conectados
(com a Web)

"The power of the Web is in its universality"

Tim Berners-Lee

Philips hue API

Full API Documentation

The full API documentation is only available to registered users. Please login or register to view t
documentation and become a member of our exciting hue community. It only takes a few second

See what you can do

Your feedback following our hue launch was clear. You want to use light as you want it. Here we
material to do so. The hue bridge has a powerful RESTful interface, which behaves like a simple
as your tool. We hope this will help you to truly use light as you want it, by making new apps, wel
installations; integrating hue into something else or just playing around.

Getting started

We've started off by releasing the core parts of our bridge interface along with some easy to follo
how to use them. This should be enough to get you up and running controlling lights from your ap

- Learn how hue works
- Easy step by step guide to get you started
- See what you can do with the hue system
- Questions? Ideas? Post them on the developer forum

Samsung TIZEN TV

New Experience of Smart TV App Development.

SAMSUNG TIZEN TV

Build an application for new Samsung Tizen TV to improve ease and convenience.
Tizen gives a powerful and flexible developmental environment.

Overview

Build an application for new Samsung Tizen TV to improve ease and convenience.

Tizen gives a HTML5-based powerful and flexible environment.
HTML5 provides an easy development environment and enable an application to adapt cross-platform environment with less fragmentation.

An application can extend device access with JavaScript-based Tizen Device API and Samsung TV Product API.
Your application can have better performance and high fluency with close accessing of OS. Use differentiated functionality of Samsung TV with APIs.

You can make a high performance game by Unity 3D engine.
Try developing application with advanced features of Samsung Tizen TV.

Caph

Games


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Eternas preocupações e incertezas

"Fear is the path to the dark side. Fear leads to anger. Anger leads to hate. Hate leads to suffering."

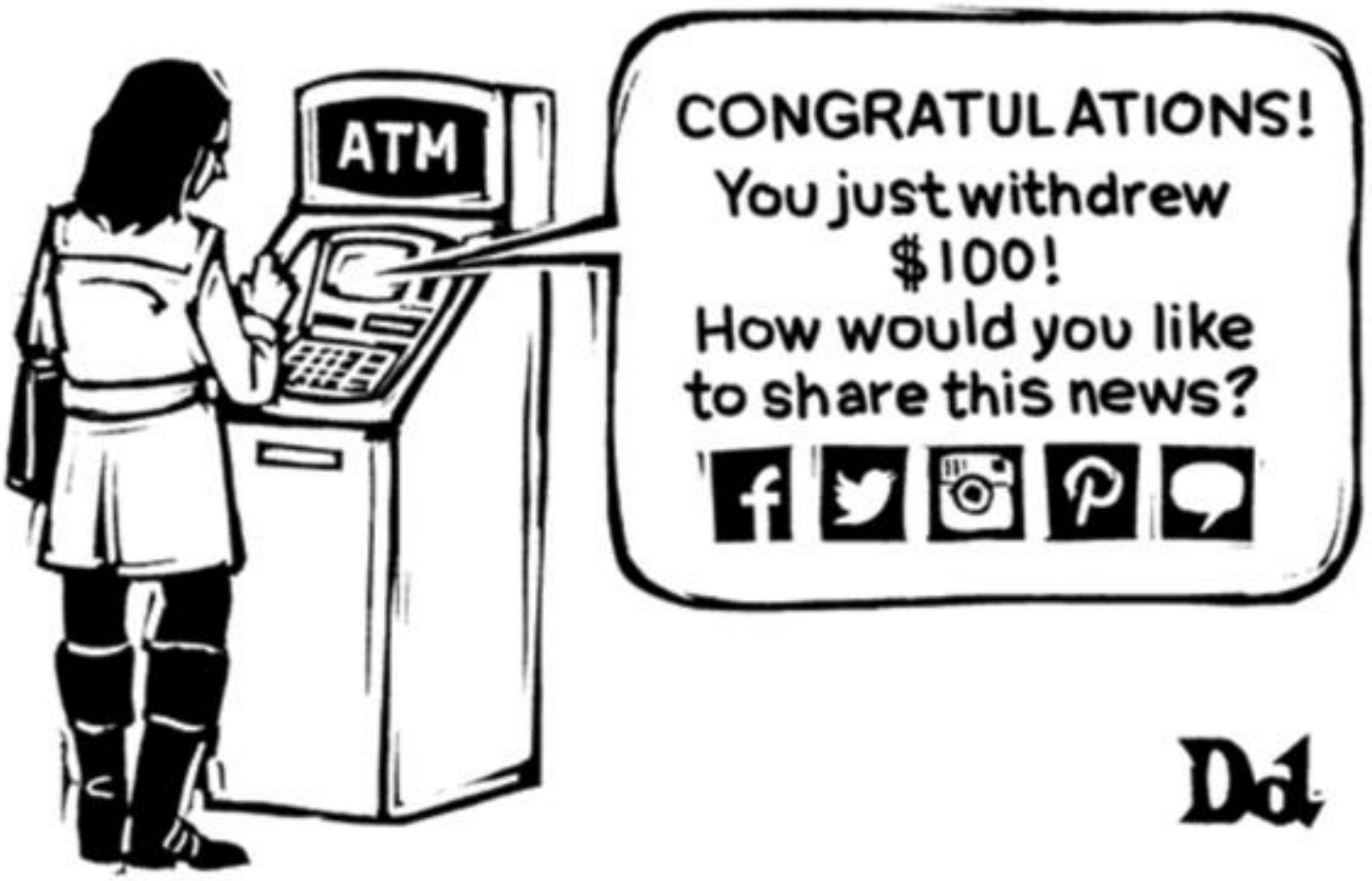
Yoda

Privacidade

"On the Internet, nobody knows you're a dog."

Cartoon: Peter Steiner form The New York Worker

Segurança



Cartoon: Drew Dernavich form The New York Worker


HOW KIDS GO PLAY "OUTSIDE" TODAY

Participe da construção da Web dentro do W3C

"as long as man tried to fly

by imitating birds, he couldn't succeed"

Le Corbusier

Obrigado

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